

**PATENT COOPERATION TREATY**

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

**PCT**

**TRANSLATION**

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

(PCT Rule 43bis.1)

		Date of mailing (day/month/year)	<b>See form PCT/ISA/210</b>
Applicant's or agent's file reference <b>29268</b>		<b>FOR FURTHER ACTION</b> See paragraph 2 below	
International application No. <b>PCT/DE2005/000156</b>	International filing date (day/month/year) <b>01.02.2005</b>	Priority date (day/month/year) <b>22.03.2004</b>	
International Patent Classification (IPC) or both national classification and IPC <b>H03H7/12, H04R25/00, G10L11/00</b>			
Applicant <b>INFINEON TECHNOLOGIES AG</b>			

**1. This opinion contains indications relating to the following items:**

- |                                     |              |  |
|-------------------------------------|--------------|--|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the opinion   |
| <input type="checkbox"/>            | Box No. II   | Priority   |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability   |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention   |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited  |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application   |
| <input type="checkbox"/>            | Box No. VIII | Certain observations on the international application  |

**2. FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

**3. For further details, see notes to Form PCT/ISA/220.**

Name and mailing address of the ISA/EP	Authorized officer
Facsimile No.	Telephone No.

WRITTEN OPINION OF THE  
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International application No.  
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Box No. I	Basis of this opinion
1.	With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  <input type="checkbox"/> This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2.	With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:  a. type of material <input type="checkbox"/> a sequence listing <input type="checkbox"/> table(s) related to the sequence listing  b. format of material <input type="checkbox"/> in written format <input type="checkbox"/> in computer readable form  c. time of filing/furnishing <input type="checkbox"/> contained in the international application as filed. <input type="checkbox"/> filed together with the international application in computer readable form. <input type="checkbox"/> furnished subsequently to this Authority for the purposes of search.
3.	<input type="checkbox"/> In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4.	Additional comments:

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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-19</u>	YES
	Claims	_____	NO
Inventive step (IS)	Claims	<u>2, 4-13</u>	YES
	Claims	<u>1, 3, 14-19</u>	NO
Industrial applicability (IA)	Claims	<u>1-19</u>	YES
	Claims	_____	NO

2. Citations and explanations:

1. Reference is made to the following document:

D1: HIRAHARA T ET AL: "AUDITORY SPECTROGRAMS IN HMM PHONEME RECOGNITION' PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON SPOKEN LANGUAGE PROCESSING (ICSLP). KOBE, NOV. 18-22, 1990, TOKYO, ASJ, JP, VOL. 1, 18 November 1990 (1990-11-18), pages 381-384, XP000503389

2. INDEPENDENT CLAIM 1

2.1. The present application does not satisfy the requirements of PCT Article 33(1) because the subject matter of claim 1 does not involve an inventive step within the meaning of PCT Article 33(3).

2.2. Document D1 is considered the prior art closest to the subject matter of claim 1. It discloses (the references in parentheses are to D1):

- circuit arrangement with a filter bank having a plurality of filter stages and a filter bank

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Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;  
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input to which an input signal can be fed (fig.

1: the filter units NOTCH<sub>i</sub> and BPF<sub>i</sub> for i = 1...N  
form an N-stage filter bank; paragraph 2);

- with a plurality of resonator circuits (fig. 2:  
AQ<sub>i</sub> i = 1...N) for generating one partial output  
signal each from the input signal, each  
resonator circuit being associated with one  
filter stage of the plurality of filter stages  
and being coupled to the output of the  
respective filter stage (fig. 1: each unit AQ<sub>i</sub> is  
coupled to the filter bank at the output of a  
block BPF<sub>i</sub>);
- each resonator circuit having: a resonator output  
at which each partial output signal can be  
provided (fig. 1: output signal "output i");
- at least one resonator control circuit for  
controlling or regulating the quality (Q<sub>i</sub> is the  
quality of filter AQ<sub>i</sub>) of at least one resonator  
circuit, the at least one resonator control  
circuit being configured such that it controls or  
regulates the quality of the resonator circuit as  
a function of the duration of the signal  
amplitude of the input signal and/or of the  
partial output signal of the resonator circuit  
(paragraph 2: "Q is determined by a Q decision  
circuit"; fig. 2: "feedback / feedforward  
control").

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2.3. The subject matter of claim 1 thus differs from document D1 in that each resonator circuit has a capacitance (C) and an inductivity (L).

2.3. Realizing frequency-selective networks on the basis of L and C components is one of the fundamentals of electrical engineering. For this reason, the use of capacitances and inductivities to create the low-pass filters  $AQ_i$  is considered a conventional and thus obvious design measure for a person skilled in the art.

2.4. Therefore, claim 1 does not involve an inventive step.

3. DEPENDENT CLAIMS

3.1. Dependent claims 3 and 14-19 do not contain any features which, in combination with the features of any claim to which they refer back, meet the PCT requirements for inventive step. See document D1 and the corresponding passages cited in the search report.

3.2. The additional features of claims 2 and 4-13 are not known or suggested by the available prior art in combination with the features of claim 1. Therefore, these claims satisfy the requirements of PCT Article 33 with respect to novelty, inventive step and industrial applicability.

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- input to which an input signal can be fed (fig. 1: the filter units NOTCH<sub>i</sub> and BPF<sub>i</sub> for i = 1...N form an N-stage filter bank; paragraph 2);
- with a plurality of resonator circuits (fig. 2: AQ<sub>i</sub> i = 1...N) for generating one partial output signal each from the input signal, each resonator circuit being associated with one filter stage of the plurality of filter stages and being coupled to the output of the respective filter stage (fig. 1: each unit AQ<sub>i</sub> is coupled to the filter bank at the output of a block BPF<sub>i</sub>);
  - each resonator circuit having: a resonator output at which each partial output signal can be provided (fig. 1: output signal "output i");
  - at least one resonator control circuit for controlling or regulating the quality (Q<sub>i</sub> is the quality of filter AQ<sub>i</sub>) of at least one resonator circuit, the at least one resonator control circuit being configured such that it controls or regulates the quality of the resonator circuit as a function of the duration of the signal amplitude of the input signal and/or of the partial output signal of the resonator circuit (paragraph 2: "Q is determined by a Q decision circuit"; fig. 2: "feedback / feedforward control").

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